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**ABSTRACT**

An epileptiform activity patient-specific template creation system permits a user to efficiently develop an optimized set of patient-specific parameters for epileptiform activity detection algorithms. The epileptiform activity patient template creation system is primarily directed for use with an implantable neurostimulator system having EEG storage capability, in conjunction with a computer software program operating within a computer workstation having a processor, disk storage and input/output facilities for storing, processing and displaying patient EEG signals. The implantable neurostimulator is operative to store records of EEG data when neurological events are detected, when it receives external commands to record, or at preset or random times. The computer workstation operates on stored and uploaded records of EEG data to derive the patient-specific templates.